Material Separation Plan
For the Diversion of Mercury
(MSP3, January 1 - December 31, 2005)

Annual Report

Wheelabrator North Andover Inc.

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Wheelabrator North Andover Inc.
Materials Separation Plan
Annual Report on the Results of the Mercury Recovery Program

Introduction

This report presents annual results of Materials Separation Plan (MSP3). It includes activities for the period covering January 1, 2005 to December 31, 2005. The report describes the activities involved in the design, implementation and operation of the Mercury Recovery Program (MRP) in each community. Each MRP is community focused, locally based and operated. Wheelabrator provides all of the technical, logistical and financial support for each program. The corner stone of the MRP Program are the community collection sites. Each community has at least one, often two and in some cases three centrally located and easily accessible locations in the city or town where residents can safely dispose of products that contain mercury.

MRP for 2005 consisted of the following elements:

- Regional Outreach
- Local Outreach / Education
  - School Outreach
  - Massachusetts Dentist Society Outreach Mailing
- Mercury Separation and Recycling
- Thermometer Exchange
- Thermostat Recovery
- School Clean Sweeps
- Button-Cell Battery Collection
- Bulk Mercury Collection
- Fluorescent Lamp Reimbursement

Wheelabrator has continued to develop, expand and improve the MRP in each community participating in the program.

- The Regional Outreach placed informative educational advertisements in an expanded number of radio stations.

- The Local Outreach placed six advertisements in the local newspapers in each community, promoting the local Mercury Recovery Program, informing residents where they could safely dispose of mercury products in their community. These advertisements are an important aspect of the overall educational and outreach effort.

- Informational flyers were distributed to the local school systems for distribution to elementary and middle school students.

- In cooperation with the Massachusetts Dental Society an informational flyer specifically designed for dentists was mailed to dentists in all twenty-five participating communities.

- The Mercury Separation and Recycling, Local Community Collection Program was continued in each of the participating communities. Each community's collection site(s) is monitored on a regular basis. When the collection pails are full they are serviced promptly by the service provider. The program collects elemental mercury and a wide variety of mercury containing devices including: fever thermometers, lab thermometers, thermostats, mercury switches, sphygmomanometers, button-cell batteries, barometers and an assortment of miscellaneous mercury containing items.

- Training and education is conducted with personnel at each site on an ongoing and as needed basis.

- A special program for the collection of thermostats continues to develop in participating communities. Local Boards of Health are encouraged to pass a regulation banning the improper disposal of thermostats.

- School Clean Sweeps collection program continues to be offered to local school systems on an as needed basis.

- Button-cell batteries continued to be collected utilizing small collection boxes.

- The Fluorescent Lamp Reimbursement offered financial reimbursement for costs related to the disposal of mercury containing lamps such as fluorescent and HID bulbs.

The Mercury Recovery Program has been successful in removing thousands of mercury containing products from the municipal solid waste stream. The Program through its regional and local educational outreach efforts, has contributed to a greater awareness on the part of residents regarding the potential impacts of mercury on human health and the environment. Residents are increasingly aware of where in their community they can safely dispose of mercury and products containing mercury.

1. Regional Outreach

The Integrated Waste Services Association coordinated the regional education / outreach program for five Massachusetts' waste-to-energy facilities including facilities located in Saugus, North Andover, Millbury, Haverhill, and SEMASS.

Integrated Waste Services Association's activities in support of Massachusetts' Waste-to-Energy Facilities' Materials Separation Plan (MSP3) for 2005 are a continuation of the IWSA's 2004 Regional Education Program with a few modifications. This following report, prepared by IWSA, describes the activities involved in the design, implementation and operation of IWSA's Program in support of the five waste-to-energy plants operating in Massachusetts and their Mercury Recovery Programs (MRP). Each facilities' MRP is community focused, locally based and operated; and the IWSA activities are designed to support in a coordinated fashion the MSPs on a regional basis.

IWSA's Annual Report on the Results of the Mercury Recovery Program

- **Introduction**

Integrated Waste Services Association's activities in support of Massachusetts' Waste-to-Energy Facilities' Materials Separation Plan for 2005 largely continues the direction set in prior years. This report describes the activities involved in the design, implementation and operation of IWSA's Program in support of the five waste-to-energy plants operating in Massachusetts and their Mercury Recovery Programs (MRP). Each facilities' MRP is community focused, locally based and operated; and the IWSA activities are designed to support in a coordinated fashion the MSPs on a regional basis.

IWSA Regional Program activities for 2005 consisted of the following elements:

- Print & Radio Advertising for "Keep Mercury From Rising"
- Evaluation & Analysis of the "Keep Mercury From Rising" campaign
- Revision & Update of Website www.keepmercuryfromrising.org
- Availability of print and video materials to facilities, the public and media

- **Regional Education Program "Keep Mercury From Rising"**

The Integrated Waste Services Association coordinated the regional education / outreach program for five Massachusetts' waste-to-energy facilities including facilities located in Saugus, North Andover, Millbury, Haverhill, and SEMASS.

a) Objectives

In 2005, the Regional Outreach Plan supported individual facility programs by the continued promotion of the media campaign, "Keep Mercury from Rising". This campaign included two waves of radio advertisements to designed to reach the broadest possible audience. The campaign used targeted advertising educating the listeners about the concerns related to mercury. The advertisements also encouraged residents to contact their local health departments to receive more information about mercury and find out where in their communities they could dispose of mercury containing devices.

The objectives for 2005 were met and included the following:

- The Regional Outreach Program continued to raise awareness about mercury-containing products in the home and the proper handling and disposal of these products;

- The Program provided information and promote local recycling events;

- The Program continued to build an integrated communications program that leveraged opportunities for incremental, free media, and worked synergistically with the efforts of individual waste-to-energy facilities.

b) Tactics

A public survey was completed in mid-2005 measuring the effectiveness of the educational campaign "Keep Mercury From Rising." Findings from this survey guide the development of the Regional Program. The website, www.keepmercuryfromrising.org, continues to be more user-friendly, and includes more contact information and contractor material, as well as continuing to provide information and assistance with recycling of mercury-containing products to the general public. IWSA produced five videos in 2003 for each waste-to-energy plant, and these videos are available on the website. The videos show the unique and effective programs now in place to keep mercury containing products out of the waste stream.

i) Survey

The effectiveness of the regional education campaign is in large part measured by an annual research survey. The polling is designed to measure positive changes in public attitudes and behaviors, as well as the receptiveness of the message. The survey questionnaire was in the field June 27-29, 2005, and consisted of 400 completes, providing a 95%

confidence level. The results showed that more people understood which household products contained mercury. In addition, fish advisory awareness scored its highest total in five years. Waste companies were viewed as the least responsible for the safe disposal of a mercury thermometer, compared to owners, manufacturers, and the government. The survey did find that exactly 60% of respondents would pay $33-45 to replace a $30 circular wall thermostat with a non-mercury replacement. In addition, another 20% would pay $60 or more for the non-mercury replacement.

ii) Advertising

Analyzing past results, it was determined that the radio ads reached a greater target audience than the print advertisements in newspapers. Rather than purchasing one wave of radio advertisements, IWSA purchased two separate three-week radio buys in 2005 and advertised on radio stations that broadened our geographic outreach. Radio is a targeted medium that provides cost-efficient mass communication and built frequency of message delivery.

The first three-week radio buy was implemented June 6-26, 2005. Markets targeted by the radio buy were Boston, Worcester, New Bedford, and Cape Cod. In order to maximize the dissemination of the message, IWSA purchased another three-week radio buy that aired September 26 through October 16, 2005. Based on the results of the survey conducted after the radio ad, we believe the plan was successful in increasing public awareness. By transferring the budget for print advertising to a second radio wave almost five months later, we have broadened the opportunities for a successful campaign.

iii) Web-based Tool

The website, www.keepmercuryfromrising.org, is user-friendly and provides additional information:

The site provides navigation under the masthead and incorporates information in the following categories:

Home – includes background on Keep Mercury From Rising and information on calling 1-866-9MERCURY for more information about safe disposal options.

Drop-off sites – provides information on where to drop-off mercury containing items.
Spills – provides a variety of information on actions one should

take in the event of a mercury spill.

FAQs –provides answers to five common questions.

Video/Audio – provides the five videos developed by the facilities as well as an audio file of the advertisement that aired for six weeks in 2005.

Links – links were proactively sought and added to this page and efforts were made to increase the number of other website that link to http://www.keepmercuryfromrising.org.

Contractors - contains useful information and links for sources of mercury related information.

iv) Print Materials

IWSA continued to make available education brochures and print information developed in 200-2003. The basic "Keep Mercury From Rising" message is consistent with media formats.

v) Video

The five-minute "Keep Mercury from Rising" educational video was completed for each facility in 2003. The video explains the need to recycle mercury-containing products and the efforts undertaken by the state of Massachusetts and waste-to energy facilities to reduce the amount of mercury entering the environment.

The video now is being used at the five waste-to-energy facilities for educational purposes during tours and other meetings. Copies of the video have been made available to local cable access television stations and a "B-roll" of visuals and sound is available for media covering MSP events. Copies of the video also have been given to local public officials to be shown at meetings, schools, senior citizen centers, and other organizations that would benefit from viewing the video. As noted above, the video also may be viewed at the website.

c) 2005 Estimates & Expenditures

Activity	Estimated Cost	Actual Expenditure
Survey	***$ 17,500***	***$ 27,000***
Media Buys	***$137,000***	***$ 152,127***
Website	**$ 2,000**	**$ 987.00**
Print	**$ 2,500**	**$ 3,020**
Video	**$ 1,000**	**$ 0**

2. Local Outreach / Education

The local outreach / education effort consisted of several activities with a goal of increasing community awareness concerning mercury. The outreach / educational effort focused on three principles of proper management of mercury and products containing mercury. It identified the environmental and health impacts of mercury, identified products containing mercury and provided instructions on how residents can properly manage and dispose of mercury in their community. These activities consisted of newspaper advertisements, educational flyer mailings and distribution, local display of the educational board.

a) Newspaper Advertisements

The Mercury Recovery Program continued to be advertised in local newspapers. This local outreach activity has proven to be an effective method of educating residents about mercury and the need to properly dispose of products that contain mercury. The local program coordinators consistently report that there is always an immediate increase in activity after an ad runs in their local newspaper.

The newspaper ads were specific to each community's program. They informed residents of the potential harmful effects of mercury to human health and the environment and instructed residents where they could safely dispose of mercury containing products in their community.

A total of one hundred and thirty nine 5” x 5” ads were placed in local newspapers promoting the program. A total of six ads were planned for each community. The ads were scheduled to be placed in each community’s local newspaper for the months of: March, April, May, September, October, and November. This year because of difficulty with the agency that places the ads only the May ad actually ran in the spring. To compensate for this shortfall in advertising two ads were run in the months of September and October. The ads normally appear during the second week of the month. The vast majority of the newspapers are weekly publications usually published on Wednesday or Thursday of the week.

Four of the six ads were generic to the program, listing a variety of common products that contain mercury. All of these products could be properly disposed of at the local collection site (s). The ads also informed residents of the on-going thermometer exchange program and encouraged them to exchange their mercury fever thermometer for a new digital thermometer. The remaining two ads were specific to thermostats, encouraging contractors and residents to properly dispose of these products at the local collection site.

b) “Keep Mercury from Rising” Video

In 2004 local cable access television stations in each community received a copy of the “Keep Mercury from Rising” video. In addition, the Director of Health in each community received a copy of the film for distribution to local groups or schools etc.

In 2005 the film continued to be shown on the local cable access channels as a Community Service Announcement. Due to the short duration of the film, approximately five minutes, it is primarily used as filler between normally scheduled programs. The film is also still made available to local groups, organizations and schools through the Board of Health offices in each community.

The film is used at the Wheelabrator North Andover facility for educational purposes during tours, trainings and other meetings

c) Educational Display Board

The educational display boards that were distributed to each community in 2002 are still being effectively utilized in the local community outreach campaign. Several of the boards are permanently displayed at the city or town hall. In many communities the boards are periodically displayed and rotated among the local libraries, senior citizen centers, health fairs and town meetings. These boards compliment the other local outreach efforts

reinforcing the importance of properly disposing of mercury containing devices.

d) School Outreach Flyer

Twenty-two community school systems received educational flyers for distribution to elementary and middle school students. The flyers were separated and sent to each school in the community as back-pack stuffers to be taken home with the students. The flyers identified the program as locally based, highlighted several mercury containing products and informed residents where they could properly dispose of these products. They also encouraged parents to exchange their mercury thermometers for new digital thermometers. About half of the communities distributed the flyers in 2004 and the remaining communities in early 2005.

e) Massachusetts Dental Society mailing.

In cooperation with the Massachusetts Dental Society (MDS) an educational flyer specific to dentists was designed and printed (see attachment #5, 2004 Annual Report). The flyer was included in two mailings that were sent to every dentist in communities participating in the program. The first mailing occurred in November of 2004, the second was mailed in April of 2005.The flyers were sent by MDS to their member dentists in their association's envelope.

3. Mercury Separation and Recycling, Local Community Collection Programs

The community based collection sites continue to be the cornerstone of the overall Mercury Recovery Program. Each community has at least one; some have two centrally located, easily accessible collection site(s). These sites are typically located at the Board of Health office, Department of Public Works and or the Transfer Station.

There is a minimum of two five-gallon pails for the collection of mercury containing items at each of these sites. The second pail is the backup and is to be used only after the first pail becomes full. The individual(s) at each site responsible for the daily management of the program have been trained in the proper handling and management of mercury containing products. They have also been trained in the proper clean-up procedures in the case of a spill. Each location has a mercury spill kit and a box of zip-lock plastic bags. Written instructions are on the spill kit itself as well as on each five-gallon pail. Due to the fact that there are frequent changes in personnel, training is reviewed with the staff on an as-needed basis during visits to the collection sites. In most cases some form of training and education takes place on each visit.

Veridium is the service provider for the MRP. Attached to each five-gallon pail are two stickers. One sticker contains the program instructions with information about what to do in case of a mercury spill. The other larger sticker identifies the program, lists a few of the representative mercury containing products and gives instructions about what to do when the pail is full. The local program coordinators are instructed to secure the lid and call the 800 telephone number for a pickup. Contractually Veridium will pick up the pail within two to four weeks of being notified. In actual practice the pickup takes place within one or two weeks from the time they receive the pickup request.

In the event that a large quantity of elemental mercury is found in a residents home, special arrangements can be made for a pick up to occur at that location.

4. Thermometer Exchange

The permanent Thermometer Exchange Program continues to be a very popular component of the overall MRP. All of the participating collection locations appreciate the ongoing exchange program and consider the program as an important outreach component for the overall mercury recovery program. Although the number of thermometers collected has dropped off from the earlier years of the program there continues to be a steady flow of residents coming into the collection sites to exchange their mercury fever thermometer for a new digital thermometer. Each community has an ample supply of digital thermometers for distribution. Many of the local program coordinators utilize the residents visit to their office as an opportunity to further educate them about mercury and other aspects of the program.

The Thermometer Exchange collected 2,352 4-inch fever thermometers and lab thermometers in 2005. This is 259 more than was collected in 2004. Statistically, the number collected is equivalent to the number collected the previous year. It is anticipated that the total number of fever thermometers will decrease slightly but progressively over the next few years.

5. Thermostat Recovery

The Thermostat Recovery Program continues to expand. In 2005 only the Board of Health in the town of Boxbourgh passed the regulation. Of the twenty-six communities serviced by the Wheelabrator North Andover facility a total of fifteen have passed a version of the regulation banning the improper disposal of thermostats in the waste stream. The towns of Lexington, Westford and Chelmsford are very close to passing the regulation. It is expected that these three communities will have their regulations finalized in early 2006. The towns of Billercia, Manchester and Acton are in the process of presenting the information to their Boards of Health again in 2006. It is hoped that by the end of 2006 each of the five remaining communities will also consider passing a regulation or policy banning the improper disposal of thermostats in the waste stream.

So as of the end of 2005, fifteen communities have passed the regulation, three are in the final stages of passing it and three are in the process of reintroducing the regulation to their Boards of Health. There are five, which for a variety of reasons, are not currently in the process of considering passing a regulation.

The regulations banning the improper disposal of thermostats are very clear. They state the purpose of the regulation, definitions, penalties and effective date. The penalties associated with the regulations range from $50.00 per incident (per thermostat) up to a $300.00 fine per incident. The penalty associated with the regulation is an essential component. Without the threat of a potential financial penalty, contractors would be less inclined to properly dispose of the thermostats.

The purpose of encouraging local Boards of Health to pass a regulation banning the disposal of thermostats was an attempt to motivate contractors to properly dispose of these devices. According the Thermostat Recycling Corporation, an industry sponsored organization, eighty percent of thermostats are handled by professional contractors. Prior to initiating the effort to encourage communities to pass the regulations, very few thermostats were being collected. Now with the passage of regulations and the other activities associated with this effort such as supportive literature, direct mailings and local newspaper advertisements contractors and residents are beginning to properly dispose of thermostats.

In 2005 one direct mailing was sent to plumbers, electricians, boiler technicians and building contractors in the communities that have passed a regulation. The mailing was sent in September. Each mailing contained a notice signed by both the city or town's Building Director and Health Director. It also contained an informational flyer along with an educational piece developed by the MADEP, "Mercury and Health" and "Mercury and the Environment". In addition, two advertisements specific to thermostats were placed in the local newspapers. Due to a problem in placing the ads in the spring, both the ads specific to thermostats were placed in September and October.

Each community that passes the regulation also receives posters, similar to the flyer that was included in the mailing for display in the building department and the health department. Also, small stickers are given to each building department to be attached to permits as an additional reminder that the local building department is serious about keeping these devises from entering the waste stream.

Over the past three years the program has proven to be very successful in removing thermostats from the waste stream. Contractors and home owners are slowly responding to the program resulting in more thermostats being collected each consecutive year.

In 2005, 976 thermostats, 218 small switches and 60 large switches were collected by the program. Switches primarily come from thermostats, a total equivalent of 1,254 thermostats were collected in 2005. In 2004 a total of 720 thermostats and switches were collected. 2005 saw an increase on 534 thermostats and switches collected.

6. School Clean Sweeps

The School Clean Sweeps Program in 2005 continued to be offered to school systems for elemental mercury and products containing mercury. The program provides a free service to school systems to inspect chemical storage areas and science laboratories and for the safe removal of elemental mercury and products or devices containing mercury. In addition to the removal service the program also provided replacement products for certain items targeted for removal. The replacement products consisted of lab thermometers, digital barometers and portable and wall mounted sphygmomanometers.

In 2005, a follow-up School Clean Sweeps was conducted in one school systems. Andover High School had 51 lab thermometers and fifteen pounds of elemental mercury and one barometer.

7. Button Cell Battery Collection

The Button Cell Battery Collection is an on-going effort in each community. Each community has received a supply of small collection boxes for button-cell batteries. They are encouraged to distribute the boxes to targeted businesses and certain community locations for the collection of button-cell batteries. Key locations in any community consist of points of purchase such as drug stores, jewelry stores, hearing aide stores and camera stores. Also community locations such senior citizen centers, health offices and libraries are fairly good locations for the collection of button-cell batteries. With limited resources it is difficult for many communities to distribute and collect the collection boxes. Very often the only collection point is the Board of Health office.

Approximately 24,000 button cell batteries were collected in 2005. There are about a half dozen communities that actively collect button-cell batteries which accounts for approximately ninety-percent of the recovered button-cell batteries. These particular communities either have a recycling committee or other volunteer group that regularly collects the button-cell batteries from designated collection points in community.

8. Bulk Mercury Collection

Each community has been informed that a special collection program is available for elemental mercury. If a large quantity of elemental mercury or devices containing a quantity of mercury is identified in the community, a special pickup of the mercury (or devices) is available. All of the program coordinators have been notified of this special collection service in the event of such a discovery.

There was one special bulk mercury collection from a resident of Southborough that amounted to fifteen pounds of elemental mercury.

9. Fluorescent Lamp Reimbursement

The Fluorescent Lamp Reimbursement activity completed its third full year of implementation. A total of thirteen communities submitted invoices for reimbursement. This is an increase of five communities over the number participating in the program in 2004. Several additional communities are exploring beginning a fluorescent lamp collection program in 2006.

A number of communities have found it problematic initiating a fluorescent lamp recycling program because of the difficulty coordinating the different municipal departments necessary to implement a successful comprehensive program.

In 2005 a total of 69,556 linear feet of fluorescent lamps were collected. An additional 1,844 single bulbs such as circular, compacts, u-tubes and HID were also collected. This is an increase of over 18,000 linear feet of fluorescent lamps over the total collected for 2004.

Program Results

The town of Chelmsford was added as a participant in the Mercury Recovery Program in 2005. There is a permanent collection program established in the Recycling Office and Board of Health Office. They have a collection program for fluorescent lamps and the Board of Health intends to pass a regulation banning the improper disposal of thermostats.

The City of Lowell has established two permanent collection sites for the collection of mercury devices, one at the Community Services Office at City Hall and the other at the Department of Public Works.

The city of Watertown still does not have a permanent collection program. The city discontinued their program in 2003 due to lack of an adequate location when their recycling center and DPW yard were being renovated. It is hopeful that they will resume the Mercury Recovery Program in 2006.

The combined educational / outreach effort including the regional outreach and local outreach has been very effective in educating residents about mercury and the potential harm to human health and the environment. IWSA expanded the placement of radio ads, covering a larger listening area than in 2004. The newspaper ads were discontinued and in its place the second set of radio ads were initiated.

The regional radio and local newspaper ads, “Keep Mercury from Rising” video, mailings, flyer distribution, local promotions have all helped raise awareness of the health and environmental concern associated with the improper disposal of mercury and products that contain mercury.

The total net amount of mercury collected through the Mercury Recovery Program weighed 223.462 pounds. This is a slight increase of two pounds over the total net amount collected through the community based program in 2004. It is worthy to note that 2004 had a bulk collection from one town of 70 pounds of elemental mercury. If that number were not included the 2005 totals would be a significant increase over 2004.

The number of thermometers collected increased slightly from the previous year. There were 2,230 fever thermometers and 122 lab thermometers collected in 2005. This is an increase of 137 fever thermometers over the amount collected in 2004. Even though this years total is slightly higher than in 2004 statistically it is virtually the same. The overall recovery of thermometers has continued to level off resulting in a relatively constant level of participation in the exchange program.

A total of 1,254 thermostats and switches were collected in 2005. This is an increase of 534 devices over the total number collected in 2004. This is a significant increase in the number of thermostats collected. This increase demonstrates that a regulation passed by local boards of health banning the improper disposal of thermostats is having a positive effect with contractors. Also, contractors and homeowners are responding to the additional outreach efforts (mailings, newspaper ads, stickers and posters), resulting in a continued increase in the number of thermostats diverted from the waste stream.

The collection of fluorescent bulbs has continued to increase with over 69,556 linear feet of fluorescent lamps and 1,844 additional mercury containing lamps being collected. This is an increase of over 18,000 linear feet of fluorescent lamps. The total amount of fluorescent lamp if placed end to end would stretch over thirteen miles or half the distance of the Boston Marathon.

In conclusion, the Mercury Recovery Program was very successful in 2005 and has shown an increase in the collection of mercury containing devices in every major category. The number of thermostats and linear feet of fluorescent lamps showed a significant increase over the previous two years.

The program is operating very successfully in twenty-five of twenty-six communities. It is hopeful that Watertown will reinstitute their collection program in 2006. The regional and local outreach efforts have been very effective in educating residents about mercury and its potential harm to human health and the environment.